

WHAT IS CLAIMED IS:

1. A method of preventing or treating a disease associated with amyloid deposits of A $\beta$  in the brain of a patient, comprising administering to the patient an effective dosage of a polypeptide comprising an N-terminal segment of A $\beta$ , the segment beginning at residue 1-3 of A $\beta$  and ending at residues 7-11 of A $\beta$ .
2. The method of claim 1, wherein the disease is mild cognitive impairment.
3. The method of claim 1, wherein the disease is Alzheimer's disease.
4. The method of claim 1, wherein the disease is Down's syndrome.
5. The method of claim 1, wherein the N-terminal residue of the polypeptide is the first residue of A $\beta$  numbered from the N-terminus.
6. The method of claim 1, wherein the N-terminal segment of A $\beta$  is linked at its C-terminus to a heterologous polypeptide.
7. The method of claim 1, wherein the N-terminal segment consists of the amino acid sequence DAEFRHD.
8. The method of claim 1, wherein the polypeptide comprises the amino acid sequence DAEFRHDQYIKANSKFIGITEL.
9. The method of claim 1, wherein the N-terminal segment of A $\beta$  is linked at its N-terminus to a heterologous polypeptide.
10. The method of claim 1, wherein the polypeptide comprises the amino acid sequence AKXVAAWTLKAAADAEFRHD.

11. The method of claim 1, wherein the N-terminal segment of A $\beta$  is linked at its N and C termini to first and second heterologous polypeptides.

12. The method of claim 1, wherein the N-terminal segment of A $\beta$  is linked at its N terminus to a heterologous polypeptide, and at its C-terminus to at least one additional copy of the N-terminal segment.

13. The method of claim 9, wherein the heterologous polypeptide induces a T-cell response against the heterologous polypeptide and thereby a B-cell response against the N-terminal segment.

14. The method of claim 1, wherein the polypeptide further comprises at least one additional copy of the N-terminal segment.

15. The method of claim 1, wherein the polypeptide comprises from N-terminus to C-terminus, the N-terminal segment of A $\beta$ , a plurality of additional copies of the N-terminal segment, and the heterologous amino acid segment.

16. The method of claim 1, wherein the N-terminal segment consists of A $\beta$ 1-7.

17. The method of claim 1, wherein the N-terminal segment consists of A $\beta$ 3-7.

18. The method of claim 1, wherein the polypeptide consists of A $\beta$ 1-7.

19. The method of claim 1, wherein the polypeptide consists of A $\beta$ 3-7.

20. The method of claim 1, wherein the polypeptide is administered with an adjuvant that enhances an immune response to the N-terminal segment.

21. The method of claim 20, wherein the adjuvant and the polypeptide are administered together as a composition.
22. The method of claim 20, wherein the adjuvant is administered before the polypeptide.
23. The method of claim 20, wherein the adjuvant is administered after the polypeptide.
24. The method of claim 20, wherein the adjuvant is alum.
25. The method of claim 20, wherein the adjuvant is MPL.
26. The method of claim 20, wherein the adjuvant is QS-21.
27. The method of claim 20, wherein the adjuvant is incomplete Freund's adjuvant.
28. The method of claim 20, wherein the dosage of the polypeptide is greater than 10 micrograms.
29. A method of preventing or treating a disease associated with amyloid deposits of A $\beta$  in the brain of a patient, comprising administering to a patient an effective dosage of an agent that induces an immunogenic response against an N-terminal segment of A $\beta$ , the segment beginning at residue 1-3 of A $\beta$  and ending at residues 7-11 of A $\beta$  without inducing an immunogenic response against an epitope within residues 12-43 of A $\beta$ 43.
30. The method of claim 29, wherein the disease is cognitive impairment.
31. The method of claim 29, wherein the disease is Alzheimer's disease.

32. The method of claim 29, wherein the disease is Down's syndrome.

33. A pharmaceutical composition comprising a polypeptide as defined in claim 1 and an adjuvant.